UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/518,241	12/16/2004	Roger Philip Duffy	038665.55712US	8336

23911 7590 02/01/2011

CROWELL & MORING LLP
INTELLECTUAL PROPERTY GROUP
P.O. BOX 14300
WASHINGTON, DC 20044-4300

EXAMINER	
WATKINS III, WILLIAM P	
ART UNIT	PAPER NUMBER
1783	
MAIL DATE	DELIVERY MODE
02/01/2011	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte ROGER PHILIP DUFFY

Appeal 2010-004188
Application 10/518,241
Technology Center 1700

Before JEFFREY T. SMITH, BEVERLY A. FRANKLIN, and LINDA M. GAUDETTE, *Administrative Patent Judges.*

GAUDETTE, *Administrative Patent Judge.*

DECISION ON APPEAL[1]

Appellant appeals under 35 U.S.C. § 134(a) from the Examiner's decision[2] finally rejecting claims 1, 4-9, 11-14, and 17-21 under 35 U.S.C. § 103(a) as unpatentable over Kromrey (US 4,983,341, issued Jan. 8, 1991) in view of Cole (US 4,325,899, issued Apr. 20, 1982), further in view of Muir (US 2002/0124945 A1, pub. Sep. 12, 2002).[3] We have jurisdiction under 35 U.S.C. § 6(b).

---

[1] The two-month time period for filing an appeal or commencing a civil action, as recited in 37 C.F.R. § 1.304, or for filing a request for rehearing, as recited in 37 C.F.R. § 41.52, begins to run from the "MAIL DATE" (paper delivery mode) or the "NOTIFICATION DATE" (electronic delivery mode) shown on the PTOL-90A cover letter attached to this decision.
[2] Final Office Action mailed Mar. 19, 2009 ("Final").
[3] Appeal Brief filed Aug. 17, 2009 ("Br.").

We AFFIRM.

The "invention relates to the field of composite curing," e.g., in the manufacture of aerospace laminate components. (Spec. 1:2-5.) The invention relates, more particularly, to a breather sheet used when "[v]acuum bagging is employed to create pressure on a laminate during its cure cycle." (Spec. 1:5-6.) The breather sheet "maintain[s] a path throughout the bag to the vacuum source, enabling air and volatiles produced as the laminate cures to escape whil[e] continuous pressure is applied in the curing of the laminate" and "absorbs any excess resin bled from the laminate." (Spec. 1:13-16.)

Independent claims 1 and 7 are representative of the invention and are reproduced below from the Claims Appendix to the Appeal Brief. Claim 14, the only other independent claim, recites a "[m]ethod of using a breather sheet" in the curing of a laminate.

> 1. A breather sheet for use in the curing of a composite part comprising two distinct, affixed outer layers of semi-rigid material with a mesh layer interposed therebetween and incompressible across a plane of its surface such that the breather sheet as assembled is incompressible, each of the outer layers being provided with a plurality of holes prior to assembly of the breather sheet, the holes being configured and disposed such that when the two outer layers are fixed together to form the breather sheet a plurality of passageways is formed for air and/or volatiles to pass freely through the breather sheet from one outer layer to the other, the passageways being configured and disposed such that that [sic] the interposition of the mesh layer in any position or orientation relative to the outer layers does not substantially obstruct all of the passageways.

> 7. A method of assembly of a breather sheet comprising two outer layers and a mesh layer such that the assembled breather sheet has a plurality of passageways therethrough for the free passage of air and/or volatiles from one outer layer to the other, comprising interposing a mesh layer between two outer layers, each of which outer layer is of semi-rigid material and is provided with a plurality of holes prior to assembly, aligning the two outer layers and the mesh layer, and fixing the layers together to form a unitary breather sheet.

The Examiner found that Kromrey discloses a breather sheet as claimed, with the exception of "a mesh layer" and outer layers having "a plurality of holes." (Final 2; *see also*, Ans. [4] 3-4). The Examiner relied on Cole for a teaching of a mesh layer (Final 2; *see also*, Ans. 3-4) and Muir for a teaching of using perforations in a mold layer to allow increased venting (Final 2; *see also*, Ans. 4). The Examiner determined:

> [i]t would have been obvious to one of ordinary skill of the art to have substituted the metal mesh layer of Cole et al. for the glass bead layer of Kromrey as the metal mesh layer serves a similar function of allowing cross ventilation when the laminate is compressed in the mold. It further would have been obvious to one of ordinary skill in the art to have perforated the outer fiber layers of Kromrey in view of Cole et al. to increase the venting flow normal to the plane of the sheet because of the teachings of Muir et al. to increase vapor flow through a layer in a mold by perforation of the layer.

(Final 3; *see also*, Ans. 4.)

Appellant argues the Examiner:

[4] Examiner's Answer mailed Nov. 10, 2009.

1. erred in finding that the outer layers of Kromrey's breather sheet are a "semi-rigid" material as claimed, contending that Kromrey's outer layers are flexible (Br. 6-7);

2. relied on improper hindsight reasoning in determining that it would have been obvious to have replaced Kromrey's glass bead layer with Cole's mesh layer (Br. 8-9); and

3. erred in relying on Muir, because Muir is non-analogous art (Br. 10-11).

As further discussed below, after considering the respective positions of the Examiner and Appellant, we determine that a preponderance of the evidence favors the Examiner's conclusion of obviousness as to argued claims 1, 7, and 14 for the reasons stated in the Examiner's Answer. Accordingly, we adopt the Examiner's fact finding and reasoning (Final 2-4; Ans. 3-8) as our own in affirming the Examiner's decision to reject claims 1, 4-9, 11-14, and 17-21. *See* 37 C.F.R. § 41.37(c)(1)(vii) ("When multiple claims subject to the same ground of rejection are argued as a group by appellant, the Board may select a single claim from the group of claims that are argued together to decide the appeal with respect to the group of claims as to the ground of rejection on the basis of the selected claim alone.").

As an initial matter, we note that Appellant separately argues the patentability of method claims 7 and 14 on the basis that the Examiner did not specifically discuss these claims in the Final, but appears to have relied on the rationale used in connection with apparatus claim 1. (Br. 11-12.)

We have reviewed the Final and Answer and are in agreement with the Examiner that while the statement of the rejection does not specifically refer to claims 7 and 14, it is clear the Examiner is relying on Kromrey for a teaching of the steps of assembling a breather sheet and using a breather

sheet. (Ans. 7-8; Final 2 ("[Kromrey] teaches venting through the bead layer"); *see also*, Kromrey, col. 1, ll. 8-10 ("The field of art to which this invention pertains is molding apparatus and methods and particularly breather materials and methods of using same.").)

Turning now to the above-listed issues raised by Appellant (*supra* p. 4), we first consider whether the Examiner erred in finding that the outer layers of Kromrey's breather sheet are a "semi-rigid" material as claimed. The Examiner does not disagree with Appellant's contention that Kromrey's outer layers are flexible. (*See* Ans. 5.) However, the Examiner maintains the claim term "semi-rigid" reads on a material "having some degree of flexibility . . . , and enough rigidity that the molded article has an even surface." (Ans. 5.)

The Examiner's interpretation of the claim term "semi-rigid" is consistent with the use of this term in Appellant's Specification (*see* Spec. 3:1-12, 6:9-11). Appellant has not explained why the relied-upon disclosure in Kromrey (i.e., col. 4, ll. 1-2 and 15-20) does not support the Examiner's finding that Kromrey's outer layers possess enough rigidity to provide an even surface (*see* Ans. 5-6 (Response to Argument)) and, therefore, are a "semi-rigid material" as claimed.[5] Moreover, Appellant has not convincingly explained why the Examiner erred in finding that Kromrey's outer layers are semi-rigid because they are made of a glass fiber material, which Appellant's Specification identifies as a semi-rigid material (Ans. 5 (citing Kromrey, col. 3, ll. 65-69 and Spec. 5:5-10 ("The breather sheet . . . comprises two outer layers 13, 15 of semi-rigid material, such as carbon

[5] We note that Appellant has not filed a Reply Brief addressing the Examiner's Response to Argument.

fibre or glass fibre.")).[6] *See In re Crish*, 393 F.3d 1253, 1259 (Fed. Cir. 2004) ("[W]hen the prior art evidence reasonably allows the PTO to conclude that a claimed feature is present in the prior art, the evidence 'compels such a conclusion if the applicant produces no evidence or argument to rebut it.'" (quoting *In re Spada*, 911 F.2d 705, 708 n.3 (Fed. Cir. 1990))).

We now turn to Appellant's contention that the Examiner relied on improper hindsight reasoning in combining Kromrey and Cole.

> If a person of ordinary skill can implement a predictable variation, § 103 likely bars its patentability. For the same reason, if a technique has been used to improve one device, and a person of ordinary skill in the art would recognize that it would improve similar devices in the same way, using the technique is obvious unless its actual application is beyond his or her skill.

KSR Int'l Co. v. Teleflex, Inc., 550 U.S. 398, 417 (2007). *Cf. In re Mayne*, 104 F.3d 1339, 1340 (Fed. Cir. 1997) (stating that the substitution of one known element for a known equivalent is prima facie obvious).

The Examiner's proposed modification of Kromrey in view of Cole is based on a finding that Kromrey's glass beaded layer and Cole's mesh layer perform similar functions of providing a pathway for gases to escape and preventing defects in the final product. (Final 2-4; *see also*, Ans. 3-4.) The Examiner's position is supported by the disclosures in Kromrey and Cole. (*Compare* Kromrey, col. 2, 33-36 ("A layer of larger beads 113 . . . serves as the main lateral fluid flow path for liquids, vapors, and gases.") *with* Cole, col. 3, ll. 22-23 ("[G]ases and vapours released from the sheet follow the

[6] (*See* Br. 7 ("The mere fact that [Kromrey's] material is made of glass fiber does not of necessity make it semi-rigid.").)

surface of the screen to escape from the die."); Kromrey col. 3, ll. 51-56 ("It is . . . preferred that at least one layer of very small size beads 110 is disposed near the article to be molded to "aid in attaining a smooth surface on the molded part.") *with* Cole, col. 3, ll. 44-45 (formation of blisters and other defects in the finished part is prevented).

Appellant has not provided evidentiary support for his argument that the ordinary artisan would have replaced Kromrey's entire breather structure, not merely the beaded layer, with Cole's mesh layer. (*See* Br. 9-10.) Nor has Appellant otherwise convincingly explained why the Examiner's fact finding was insufficient to establish that the ordinary artisan would have had a reasonable expectation of success in using Cole's mesh layer in place of Kromrey's glass beaded layer. Accordingly, Appellant's arguments fail to persuade us that the Examiner relied on improper hindsight reasoning.

With respect to the Examiner's proposed combination of Kromrey and Cole with Muir, Appellant's argument is limited to his contention that Muir is non-analogous art. (*See* Br. 10-11.)

If a reference is in a different field from that of the inventor's endeavor, it is still considered analogous art if it deals with a matter which logically would have commended itself to an inventor's attention in considering his problem. *In re Clay*, 966 F.2d 656, 659 (Fed. Cir. 1992); *see also, Heidelberger Druckmaschinen AG v. Hantscho Commercial Prods., Inc.*, 21 F.3d 1068, 1072 (Fed. Cir. 1994) ("[I]n order to determine whether a reference is reasonably pertinent to the inventor's field of endeavor, one looks to, among other things, the problem confronting the inventor." (citing *Orthopedic Equip. Co. v. U.S.*, 702 F.2d 1005, 1009 (Fed. Cir. 1983))).

Appellant argues one of ordinary skill in the art would not have looked to Muir because the patent is not directed to breather sheets. (Br. 10-11.) However, Appellant has not explained why the Examiner erred in determining that the ordinary artisan would, nonetheless, have reasonably considered Muir in attempting to solve a "common problem of increasing the escape of gas trapped between layers during molding in a direction normal to the surface of the layers" (Ans. 6-7; *see also*, Final 4).

In sum, for the reasons explained above and in the Answer, we are not persuaded of error in the Examiner's obviousness determination as to appealed claims 1, 4-9, 11-14, and 17-21. Therefore, we affirm the rejection of these claims under 35 U.S.C. § 103(a) as unpatentable over Kromrey in view of Cole and Muir.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a)(1).

AFFIRMED

TC

CROWELL & MORING LLP
INTELLECTUAL PROPERTY GROUP
P.O. BOX 14300
WASHINGTON, DC 20044-4300